



Revision number:

Purchasing Agent: JARED GARDNER

Item: TRAFFIC OPERATIONS ITS CABINETS

Vendor: 91845A TRAFFIC SIGNALS CONTROLS, INC.
255 WEAVER PARK ROAD, STE. 100
LONGMONT CO 80501-6070

Internet Homepage: www.trafsig.com

Telephone: (303) 772-2787

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Contact: CHAD CULTER

Email address: cculter@trafsig.com

Brand/trade name: SAFETRAN

Price: SEE ATTACHED

Terms: NONE

Effective dates: 07/08/03 through 07/08/04

Days required for delivery: 90-120 DAYS

Price guarantee period: 1YEAR

Minimum order: \$250.00

Min shipment without charges:

Other conditions: TWO (2) - ONE YEAR RENEWAL OPTIONS

THIS IS A NEW CONTRACT.

This contract covers only those items listed in the price schedule. It is the responsibility of the agency to ensure that other items purchased are invoiced separately. State agencies will place orders directly with the vendor (creating a PG in Finet) and make payments for the same on a PV referencing the original PG. Agencies will return to the vendor any invoice, which reflects incorrect pricing.

This Contract resulted from bid JG4003



PRICING – ITS CABINET

1	ITS Cabinet Assembly – 342 Configuration	\$ <u>7,665.00</u> per Cabinet Assembly
2	ITS Cabinet Assembly – 354 Configuration	\$ <u>8,435.00</u> per Cabinet Assembly
3	ITS Cabinet Assembly – 342/170 Configuration	\$ <u>7,870.00</u> per Cabinet Assembly
4	ITS Cabinet Assembly – Size 1 Base Configuration	\$ <u>4,855.00</u> per Cabinet Assembly
5	ITS Cabinet Assembly – Size 3 Base Configuration	\$ <u>9,165.00</u> per Cabinet Assembly
6	Optional Modules and Spare Parts (¶ 4.5)	
6.1	Model 200 Switch Pack Unit	\$ <u>20.50</u> per Unit Assembly
6.2	Model 204 Flasher Unit	\$ <u>21.00</u> per Unit Assembly
6.3	Model 212 ITS Cabinet Monitor Unit	\$ <u>450.00</u> per Unit Assembly
6.4	Model 214 ITS Auxiliary Monitor Unit	\$ <u>222.00</u> per Unit Assembly
6.5	Model 216-12 ITS Power Supply Units	\$ <u>455.00</u> per Unit Assembly
6.6	Model 216-24 ITS Power Supply Units	\$ <u>420.00</u> per Unit Assembly
6.7	Model 218 Serial Interface Unit	\$ <u>240.00</u> per Unit Assembly
6.8	Model 242 DC Isolator	\$ <u>30.00</u> per Unit Assembly
6.9	Model 252 AC Isolator	\$ <u>35.00</u> per Unit Assembly
6.10	Shelf	\$ <u>29.00</u> per Unit
6.11	Raw / Clean AC Power Assembly	\$ <u>134.00</u> per Unit Assembly
6.12	Raw / Clean AC Power Extension	\$ <u>65.00</u> per Unit Assembly
6.13	DC Power / COMM Assembly	\$ <u>176.00</u> per Unit Assembly
6.14	DC Power / COMM Extension	\$ <u>100.00</u> per Unit Assembly
6.15	AC Clean Module Assembly	\$ <u>193.00</u> per Unit Assembly
6.16	Documentation Drawer Assembly	\$ <u>93.00</u> per Unit Assembly
6.17	Service Panel Assembly	\$ <u>215.00</u> per Unit Assembly
6.18	DC Power / Communications Assembly	\$ <u>233.00</u> per Unit Assembly
6.19	Power Distribution Assembly - ITS	\$ <u>1,875.00</u> per Unit Assembly



6.20	Input Assembly	\$ <u>600.00</u> per Unit Assembly
6.21	6 Pack Output Assembly	\$ <u>1,180.00</u> per Unit Assembly
6.22	14 Pack Output Assembly	\$ <u>1,860.00</u> per Unit Assembly
6.23	2070-2A C1S Interface Panel (see ¶4.2)	\$ <u>403.00</u> per Unit Assembly
6.24	Heater Assembly (see ¶4.4)	\$ <u>250.00</u> per Unit Assembly
7	Training Session (¶7)	\$ <u>8,980.00</u> Lump sum
8	Engineering Field Services (¶8)	\$ <u>135.00</u> per hour

1. Scope:

This specification sets the minimum requirements for the purchase of Intelligent Transportation Systems (ITS) Equipment Cabinets. The Cabinet is a general-purpose field cabinet that is intended for housing ITS electronic equipment in harsh roadside environments. It will be used for a wide variety of ITS applications.

2. References:

- 2.1. "ITS Cabinet – Intelligent Transportation System (ITS) Standard Specification for Roadside Cabinets" is currently a draft standard from AASHTO / ITE / NEMA. During the draft period, the standard specification is currently available by following these instructions:

- 2.1.1. On the internet go to www.nema.org
- 2.1.2. Go to: Standards
- 2.1.3. Go to: Forums
- 2.1.4. Go to: Advanced Transportation Controller
- 2.1.5. Sign in as: GUEST (Set up an account the first time.)
- 2.1.6. Go to: Cabinet WG -- Public
- 2.1.7. Go to: "ITS Cabinet Standard 050803 - Recommended Standard" or the latest available standard.

For the current status of the specification, see the USDOT ITS standard fact sheet at

<http://www.its-standards.net/Documents/ITE%209603-2.pdf> (Note: Only draft standards may be available on the internet. Published standards are available from ITE and other sources. Standards may not be available after the comment period and before they have been published. Contact Ed Booth, 801-887-3710 of Utah DOT, Traffic Operations Center, if final and draft standards are not available.)

- 2.2. Agency – For this document and related documents, the Agency shall refer to Utah Department of Transportation.

3. General Cabinet Requirements:

- 3.1. The ITS Cabinet shall conform to the ITS Cabinet Standard or draft ITS Cabinet Standard (See ¶ 2.1). Where there are changes in the draft ITS Cabinet Standard, the vendor shall make a best effort to manufacturer to the most recent revision of the ITS Cabinet Standard. Where



differences occur between the ITS Cabinet standard and this specification, this specification shall govern.

- 3.2. The ITS Cabinet shall be assembled to one of the configurations described. These configurations may be altered at the time that they are ordered. Bidding will be based on these configurations.
 - 3.2.1. All hardware shall be included for installation of all components into the cabinet. Foundation (pad) "J" bolts, washers, and nuts for mounting the cabinet down are not to be included.
- 3.3. The ITS Cabinet shall be assembled as much as possible prior to shipment and packaged according to the ITS standard requirements. Pallet sizes may be larger than those required in the ITS specification.
 - 3.3.1. The miscellaneous accessories, including the plug-in modules, data keys, cables, documentation shall be packaged as required and placed in the cabinet where possible.
 - 3.3.2. The components for each system should also be packaged on a single pallet. Do not mix components from different systems.
 - 3.3.3. The cabinet shall be covered with an appropriate cardboard box, or similar protection.
 - 3.3.4. The component and cabinet boxes shall be labeled with cabinet configuration.
- 3.4. The CMU and AMU shall be manufactured by Eberle Design Inc. (IDE), 3819 East La Salle Street, Phoenix, AZ 85040.
- 3.5. There shall be equipment support brackets or rails for under the ATC controller. The supports shall provide a shelf for the ATC before it is bolted into place. The supports shall not take additional rack cage space.
- 3.6. The housing #1 cabinet door configuration shall conform to Figure 3.6. (This varies from the ITS Cabinet Standard. This will increase safety, and protect the internal equipment from snow and slush being plowed into the cabinet through the filter.)

Figure 3.6

- 3.6.1. The front door shall be hinged on the right (See Figure 3.6.), and have the louvered vent per the ITS Cabinet Standard.
- 3.6.2. The rear door shall be hinged on the left (See Figure 3.6.), and not have any ventilation openings.
- 3.7. A Polystyrene type air filter shall be used. Filters that are fabricated with products affected by water are not acceptable.
- 3.8. The cabinet openings (when the doors are closed) shall be vermin- and insect-proof. Opening clearances in the door vent louvers and exhaust areas shall be smaller than can be entered by bees and wasps. Alternately, permanently installed insect screens may be used. (The cabinet air filter is not adequate for an insect barrier.) The cabinet shall provide ventilation per the ITS Cabinet Standard requirements.



- 3.9. The ITS Cabinet and all other supplied components shall be warranted for a minimum of three years from date of delivery, or for one year from time of installation, whichever is longer.
- 3.9.1. The period of warranty coverage shall not be less than the manufacturers usual and customary warranty period.
- 3.9.2. The agency, or the manufacturer's representative, may make minor warranty repairs with the consent of the manufacturer. The manufacturer will be responsible for all other warranty repairs. The vendor will bear all costs including labor, parts, and shipping charges.
- 3.10. The vendor shall provide telephone customer support as required during normal business hours, at no cost during the warranty period.
- 3.11. The vendor shall be able to provide the necessary replacement products to maintain the operability of the system for a period of 5 years after purchase.
- 3.12. The vendor shall provide two bound copies of the documentation with the first 25 ITS Cabinets to each purchasing agency. Additional ITS Cabinets shall have one bound copy of the documentation. At a minimum, each documentation set shall have the equivalent of the following:
- 3.12.1. The documentation required in the ITS Cabinet standard (§ 2.1).
- 3.12.2. The maintenance manual shall include a test procedure and utilities to verify the operation of all components and assemblies.
- 3.13. The documentation pouch is not required when a documentation drawer is supplied. Documentation shall be placed in the documentation drawer when supplied.

4. Additional Components and Assemblies Requirements

- 4.1. There shall be a Cabinet Documentation Drawer.
- 4.1.1. The drawer shall nominally be 1.86-inch high, 19-inch rack cage mount design (17-inch width), and a minimum of 13-inch depth.
- 4.1.2. The drawer shall be on slides and extend a minimum of 14 inches.
- 4.1.3. The drawer shall be rated for a minimum of a 40 pounds load.
- 4.1.4. The drawer shall have a desktop cover that can be tilted up to open when the drawer is extended, and protects the contents from rain when closed.
- 4.1.5. The drawer shall be constructed such that incidental water that enters the drawer can drain.
- 4.2. There shall be "2070-2A-C1S Interface Assembly" available for the "342 / 170" cabinet configuration. This interface provides a transition technique from 170 controller to ITS bus technology while ATC software is being developed. This interface assembly shall take inputs and outputs that connect to the C1S connector on the ATC 2070 - 2A module, and route them to the "test" connectors on the ITS Input and Output assemblies, bypassing the need for an SIU.
- 4.2.1. The interface assembly shall have an EIA 19-inch panel mounted in the back of the cabinet, near the top. The interface panel shall have a terminal for each function on the C1S connector. Additional terminals may be used, as required, such as for logic ground.
- 4.2.1.1. The terminals shall be clearly labeled with their function.



- 4.2.2. There shall be a cable from the interface panel to the 2070-2A module, C1S connector.
 - 4.2.2.1. All functions shall be wired to the terminal strip.
 - 4.2.2.2. The cable shall comply with cabling requirements of the ITS Cabinet Standard.
 - 4.2.2.3. The cable shall be long enough to have a minimum of a 30-inch service loop with the connector installed.
 - 4.2.2.4. The cable shall have a stress relief clamp on the connector and on the panel.
- 4.2.3. There shall be a cable from the interface panel to each of the "test" connectors on the input assemblies and output assemblies.
 - 4.2.3.1. All functions shall be wired.
 - 4.2.3.2. The cable shall comply with cabling requirements of the ITS Cabinet Standard.
 - 4.2.3.3. The cable shall be long enough to have a minimum of a 30-inch service loop with all connectors installed.
 - 4.2.3.4. The cable shall have a stress relief clamp on the connector and on the panel.
 - 4.2.3.5. All connectors or cables shall be clearly labeled with their destination location.
 - 4.2.3.6. There shall be one "test" connector for each input and output assembly that is supplied with the cabinet. If the "2070-2A C1S Interface Panel" is ordered without a cabinet, then there shall be a "test" connectors for two (2) input assemblies and one (1) 14 pack output assembly, unless otherwise ordered.
- 4.3. There shall be spare 10-32 screws and washers for mounting assemblies to the EIA 19-inch rack cage. These shall be the same types as those used for mounting the assemblies in the rack cage.
- 4.4. There shall be an optional cabinet heater assembly. The heater shall be installed in the bottom front of the cabinet, and conforming to the following requirements
 - 4.4.1. The heater shall be configured to install in a EIA 19-inch rack cage
 - 4.4.2. The heating element shall draw 500 watts and have an output of at least 1700 BTU/hr.
 - 4.4.3. The heating element shall have a built-in quick response thermostat with sealed contacts that has a temperature control range of 0°C to 40°C (32°F to 100°F), and have a built-in thermal cut-off to automatically shut-off heater in event of overheating.
 - 4.4.4. The heater assembly shall not depend on a fan(s) to function. A failed fan(s) shall not reduce the heater system's life or cause overheating.
- 4.5. The vendor shall provide, as options and / or spare parts, accessory equipment related to ITS cabinets. These shall include items that are specified in the "ITS Cabinet – Intelligent Transportation System (ITS) Standard Specification for Roadside Cabinets", and this specification. These shall include:
 - 4.5.1. Model 200 Switch Pack Unit
 - 4.5.2. Model 204 Flasher Unit
 - 4.5.3. Model 205 Transfer Relay
 - 4.5.4. Model 212 ITS Cabinet Monitor Unit
 - 4.5.5. Model 214 ITS Auxiliary Monitor Unit
 - 4.5.6. Model 216-12 and 216-24 ITS Power Supply Units
 - 4.5.7. Model 218 Serial Interface Unit



- 4.5.8. Model 222E and 224E Loop Detector Sensor Units
- 4.5.9. Model 231 and 232 Magnetic Detector Units
- 4.5.10. Model 242 DC Isolator
- 4.5.11. Model 252 AC Isolator
- 4.5.12. Shelf Assembly
- 4.5.13. Raw / Clean AC Power Assembly and Extension
- 4.5.14. DC Power / COMM Assembly and Extension
- 4.5.15. AC Clean Module Assembly
- 4.5.16. Documentation Drawer Assembly
- 4.5.17. Service Panel Assembly
- 4.5.18. Power Distribution Assembly ITS
- 4.5.19. Input Assembly
- 4.5.20. 6 Pack and 14 Pack Output Assemblies
- 4.5.21. 2070-2A C1S Interface Panel (see ¶ 4.2)

REPORTS: The contractor will submit yearly reports to the state purchasing agent showing quantities and dollar volume of purchases by each state agency and political subdivision. These reports will be due by April 8th of each year.

FINET COMMODITY CODE(S) (for agency use only)

5508000000-TRAFFIC CONTROLS AND EQUIPMENT, ELECTRIC SYSTEMS